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THE BASIS OF INDUCTION.

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III.

It is strange that the school of M. Cousin should have, in general, considered the principle of induction as primitive and irreducible. For the doctrine of this school upon substance and its causes, should offer, it seems to us, an easy means of explanation. If, in truth, phenomena are sustained and produced by entities, abstracted from the vicissitudes of sensible existence, what would be more natural than to search in the uniform action of these entities, the reason of the constant succession of phenomena? And what more satisfactory than to attach the principle which serves as a basis for science to that which is regarded as a basis of metaphysics and of the supreme law of thought? In this school the principle of induction is formulated ordinarily, by saying that there is order in nature: but there is not given perhaps a sufficiently precise idea of this order. Do they wish to say

that the elementary phenomena which compose the hidden woof of things (la trame cachée des choses) are connected by virtue of an inflexible mechanism, which mechanism ought either to maintain or subvert the exterior and apparent order of nature? Do they mean to say, on the contrary, that nature is engaged in maintaining the harmony of beings, the distinction of species, organizations, life, and the means, in short, which she ought to take in order to attain to this? In a word, is order in the means or in the results? This question will no longer be doubtful if one consents to attach the idea of this order to the doctrine of substance and causes. It is believed, generally, that the number of these entities is equal to that of the constant groups of phenomena that we call beings; and their presence appears indispensable above all in organized beings, for which they are a principle, at one time both of unity and of action. Their function is not then to connect each phenomenon to a preceding one by the tie of a blind necessity, but rather to co-ordinate many series of phenomena following one law of agreement and of harmony; if these are not final causes in the sense of Aristotle and of Kant, they are at least causes which act for ends. The conception of universal order is then according to this doctrine, exclusively teleological. Now if it is important to men in power, to count upon the regularity of phenomena more or less complex, upon which their preservation depends, the proper object of science, that which she pursues to-day more ardently than ever, is, on the contrary, to determine the elementary conditions of these phenomena. She has need then of a principle which will guarantee to her the relations of causes to effects, rather than those of means to ends, of a principle of necessity rather than of harmony. If each sensible individual is the work of a thing-in-itself, (chose en soi), which employs his wisdom to conserve it, it suffices to establish by a superficial observation the ordinary results of this secret labor: but it is absurd to follow from experience to experience a mechanism of phenomena which will only serve to fetter it, and in which it will vanish even as far as the distinction between individual beings. The principle of universal order, thus understood, is the formal condemnation of science, properly so called.

Whatever may be the insufficiency of this principle, it is interesting to examine if the metaphysic of the school which has adopted it offers it at least a solid foundation. The difficulty does not consist in deducing the notion of universal order from

that of things-in-themselves: For, besides that this latter notion is vague enough, all that one believes that he knows of the mode of existence and action of things is so fitted to explain the maintenance of an exterior order in nature, that we are tempted rather to see in it an ingenious hypothesis than a principle certain in itself. But this is not understood in this manner, and the existence of things-in-themselves is regarded as the corner stone, and nearly as the whole edifice of metaphysics. Let us see how it is proved, and if indeed it is proved.

The most simple process, if not the most sure, is to invoke in favor of this existence, the witness of common sense. Can any one conceive, it is sometimes asked, a property which does not reside in a substance, an event which may not be determined by a cause? Certainly not: but it is important to know what common sense means by cause or substance. All the world believes that an odor comes from an odoriferous body, and that a a savor belongs to a sapid body; but we should profoundly astonish a man, a stranger to philosophic speculation, if we assured him that this body which strikes his eye and which resists his effort, is itself only a superficial indication of an entity which can neither be seen nor touched. *Substance*, for the vulgar as for the savant, is synonymous with matter; and the conviction that all reality is material is so profoundly rooted in most men, that only moral or religious reasons can decide him to make an exception in favor of the human soul. As to the word *cause*, it signifies for them one phenomenon which determines another; they are not of the opinion of Mr. Mill, who admits only a relation of succession, without any real influence, between phenomena, but they are still further off from believing that phenomena appear or disappear at the will of mysterious beings, armed with a sort of magic wand. Even examples which they use react against this doctrine, because, when a man has been assassinated, justice searches for the immediate cause of this event in the motion of a weapon pushed by a hand, and it is frightened from the pursuit of an entity which it would have small chance of catching. If one dared to speak in the language of Kant to common sense, we might say, that it believed firmly in *substances* and in *phenomenal causes*, but that it had not the slightest suspicion of *noumena*. If we should renounce the construction of common sense upon a question which is after all strange to it, there only would remain, it seems, for us to sustain that we know substan-

ces and causes by an immediate intuition, analogous to that of sense; for to say we know because we do know without explaining how, is to avow that we know nothing and have nothing to say. If we have no intuition of these entities, we have no idea of them, and the word which designates them has no sense; the affirmation of their existence even is without foundation, and the necessity which is alleged can have only a subjective and illusory character. We must leave to the Scotch school these verities of air, which impose themselves upon the mind in virtue of pretended evidence; and it is perhaps because the doctrine of substances and causes has for so long a time preserved this abstract form among us, that it has been judged useless to resolve the principle of universal order into a principle which had not any more solid foundation. On the other side, we must acknowledge that intuition, to which recourse has been had equally, has not so far furnished us with notions that are very precise upon the nature of these entities and upon the manner in which they operate. All that is known upon this latter point is that they develop or manifest themselves, that is simply to say that they contain the reason of sensible appearances; and, as to the first, not only is their essence still unknown, but their number even is so illy fixed, that one often employs the words *substance* and *cause* in the singular number; as if a phenomenon could be produced by the general idea of the *cause*, or as if all the phenomena were the immediate effect of a single and infinite cause. But if intuition scarcely teaches us anything about the substance and cause of a given phenomenon, it is still less fitted to teach us that *all* phenomena *must* have a substance and a cause; because it can have respect only to a determined object, and the intuition of a principle, outside of all actual application, is a contradiction in terms. The existence of a thing-in-itself outside of a phenomenon, even if it were given to us to perceive it, would be for us only a particular and contingent fact; and if all things should appear either in succession or at once before the eyes of our intelligence, this experience of a new kind would only reveal to us a universal fact, not a necessary truth. It is then useless to attempt to found metaphysics upon what is called the *principle of substance* and the *principle of cause;* because if knowledge of things-in-themselves is intuitive, it cannot be clothed with the form of a principle, and if it is not, it cannot pretend to any objective value. Lately the influence of Maine de Biran has

given birth in the school of M. Cousin to a middle theory, equally distant, it is believed at least, from an abstract dogmatism and from what may be called the *empiricism* of pure reason. According to this theory,and contrary to the primitive doctrines of the school, we seize immediately, not by reason but by consciousness, a substance and a cause, which is *ourselves;* and the office of reason limits itself to giving to this primitive knowledge a universal and necessary form, in revealing to us that the phenomena which are strange to us, have not less need of substance and cause than those of which we are the subject. But whether the operation of reason may be either primitive or secondary, it imports equally for us to prove that this operation is legitimate; and if it is demanded of us by what right we extend to all phenomena the conditions of existence of some, we have always to return to the one idea, whether it may be of a science without assignable origin, or whether it may be an intuition like that which is regarded as the exclusive privilege of consciousness. On the other hand, there may be raised some doubts upon the reality, or at least upon the extent of this privilege; and without contesting the original character of the notion of Ego, (moi) it is permitted to demand of one's self whether consciousness puts us in presence of a substance and a cause, in the sense in which these words are taken—that is to say—of a thing-in-itself, distinct from internal phenomena. It does not appear that we are well convinced of this—after all, since the spirituality and immortality of the soul are still continually established by arguments which this hypothesis, if it be verified, render absolutely worthless; and if it is incontestible that the *Ego* concentrates in its unity and enchains in its identity all diversity submitted to consciousness, perhaps it is just to see in this unity and this identity only the formal conditions of consciousness itself, and not the attributes of a substance charged to explain the apparition of it, and to guarantee the duration of it. It is not doubtful that our actions proceed freely and immediately from our faculty of *willing;* and from another point, if, as Leibnitz and Kant have taught, the succession of our internal states is not submitted to laws less rigorous than those of physical phenomena, we must acknowledge that we do not find within us, any more than outside of us, the trace of that absolute initiative which seems to characterize the action of a supra-sensible cause. But let us admit that we have consciousness of such an initiative. Is it then upon this model that causes distinct

from us must be conceived, and are we able to confide the care of maintaining the order of nature to entities endowed with a liberty of indifference?

A later and profound modification of the doctrine of substances and causes consists in substituting for these two words that of *Force*, and of saying that we perceive immediately, by a sort of special sense, the conflict of our forces with the external forces. The fact is certainly established, but it is also certain that content with establishing the fact, the principle is not demonstrated: For the sense of which mention is made truly does teach us that our movement is produced by a force, and even makes us indirectly recognize the action of another force in the resistance we meet: but this sense is evidently powerless to teach us that all the movements which are executed in the Universe are produced or arrested by similar forces. Still more, when they speak of forces as things in themselves, we figure to ourselves under this name. I know not what sort of spiritual beings each one of whom is charged with the impulsion of the movement, whether it may be of a living body or of an inorganic mass: now this is a supposition which is not only gratuitous, but which is absolutely rejected and contradicted by experience. It may be said that a star in motion is animated by a single force, but it is absurd to represent this force as a simple and indivisible being: For if this star breaks into many fragments each of which continued to go on in its own orbit, we are obliged to acknowledge that the total force which animated it is decomposed into as many partial forces as there are fragments to impel. We know that our muscular effort can, under the influence of our will concentrate itself in one single effort, but we do not know if it proceeds from one single focus, or rather we do certainly know the contrary: because while a part of this energy remains submissive to our control, another part may determine, in some one of our members convulsive movements which do not in themselves differ from voluntary motions. Thus not only is there nothing which authorizes us to affirm that the Universe may be a system of forces, but the existence of our own force, in the sense in which the word is taken, is an unsustainable fiction. Force is no more a thing-in-itself, than extension from which it is, for the rest, inseparable, and the particular sensation which attests its presence in us, does not lift us one single step outside of or beyond the sphere of phenomena. Only when

we are limited to saying that phenomena repose upon a *substratum* inaccessible to sense, if they do not give us a precise idea of that *substratum*, we are left at liberty at least to conceive it at our will, or rather are determineed almost irresistibly to look for the type in our own thought. When we believe on the contrary that we seize immediately this *substratum* in each voluntary effort it is declared without circumlocution that the tendency to movement proceeds only from itself: The chimerical entities in which it is essayed to realize it, do not linger, but vanish away and leave us definitely in presence of a pure phenomenon charged with explaining itself and also all others. A Metaphysic which looks for its sustaining point (*point d'appui*) in experience is very near its abdication in the hands of physical science.

The doctrine of substances and causes and that which recognizes nothing beyond phenomena is shipwrecked then equally upon the problem of Induction, but from different reasons. Empiricism attempts vainly to settle itself upon the solid but too narrow ground of phenomena: The contrary doctrine, giving a larger basis to this principle, builds upon empty air, and does not succeed in establishing a necessity of thought, whilst thinking it satisfies it. Substances and Causes are only a *desideratum* of the Science of Nature, a name given to the unknown reasons which maintain the order of the Universe, the enunciation of a problem transformed into a solution by an artifice of language. Of the two paths we have followed so far, and between which our choice seemed limited, neither have conducted us to any goal: Does there exist a third? Where shall we find it?

IV.

However embarrassing this question may appear at first view, our hesitation cannot be long, because we have absolutely only one part to take. Outside of phenomena and in default of distinct Entities there remains only the thought itself: It is then, in the thought, and in its relation with phenomena, that we should search for the basis of Induction. But before attempting a solution of this kind, let us essay to give a precise idea of it, and to dissipate in advance, the prejudices or hindrances it may awaken.

There are only three modes, possible in which principles may be presented, because there are only three modes of conceiving reality and the act by which our minds enter into

commerce with themselves. We may admit with Hume and Mr. Mill that all reality is a phenomenon and that all knowledge is in last analysis, sensation: principles, if there may be question of *principles* in such an hypothesis, will then be only results, the most general results, of universal experience. We may suppose with the Scotch school and Mr. Cousin, that phenomena are only the manifestation of a world of Entities inaccessible to our senses: and in that case the principal source of our knowledge ought to be a sort of intellectual intuition, which would disarm at once and reveal to us, the nature of these entities and the action which they exert upon the sensible world. But there is a third hypothesis which Kant introduced into philosophy and which merits at least to be taken into consideration: it consists in pretending that whatever may be the mysterious basis upon which phenomena rest, the order in which they succeed each other is determined exclusively by the exigences of our own thought. The most elevated form of our knowledge is, in this hypothesis, neither an intellectual intuition nor a sensation, but a reflection, by which the thought seizes immediately its own nature and the relation it holds with phenomena: it is from this relation that we are able to deduce the laws which it imposes upon phenomena, and which are nothing less than principles.

It will be said that this hypothesis is absurd and destroys itself, since each phenomenon can not obey as many different laws as there are distinct thoughts: but it is easy to reply, that here we consider only the faculty of thought in the mind, and that faculty is acknowledged to be identical in all, by the world. When we suppose, for instance, that principles exist in themselves, and outside of all thought or at least beyond the thought of all who inhabit a world like ours, we suppose that all thoughts like ours are equally capable of understanding these principles: It is not therefore wronging their unversality to seek a basis in the very faculty through which they are known. But, we shall be asked, how can we deny that the existence of principles may be independent of our consciousness, or how shall we conceive that the thought may be able to modify, in some measure the nature of its objects? It is true, that there is nothing impossible in a principle's or a thing in general's existing outside of all commerce with our minds: but it will be granted to us, at least, that it is impossible for us to know anything about it, since a thing begins to exist for us only at the moment in which our

minds enter into intercourse with it. We willingly grant upon our side, that the existence of principles is independent of our actual knowledge, and that they do not cease to be true because we cease to affirm them internally: but it suffices for that that there should be a reason which will determine us to affirm them every time that we do think of them, and that this reason may be found in our own faculty of knowledge or in things external to our minds. In short we do not pretend that thought can modify by an arbitrary intervention, the nature of its objects: We assert only this, that in order that these objects should exist for us, they should possess in themselves a nature which would render possible the exercise of the thoughts. It is true, that it remains to know, whether thought is an empty capacity, which may be filled indifferently by all sorts of objects, or if the knowledge which we have of phenomena supposes one or several conditions upon their part: but we could not deny at least that in this latter case, these conditions ought to constitute, for all the phenomena, with which we have any business, the most inflexible of laws.

But the hypothesis which we propose is not only admissible in itself: it is the only admissible one, because it is the only one which permits us to comprehend how we can know *a priori* the objective conditions of the existence of phenomena. We may speak, it is true, of innate consciousness, which presents itself to our minds under a universal and necessary form: but it can not be proved that this consciousness connects itself with its objects, and that it is a true knowledge, and not a vain dream. To say that there exists a sort of pre-established harmony between the laws of thought and those of reality is to resolve the question by the question itself: How, indeed are we able to know that our knowledge accords naturally with its objects, if we do not already know both the nature of the objects as well as that of our intellect? It is needful therefore to recur to the direct intuition of reality, of which at least no one will contest the objective value: but whether this intuition bears upon simple phenomena, or upon things-in-themselves, it is equally certain that it cannot serve as foundation for principles, that is to say for universal and necessary knowledge. Things-in-themselves, which become objects of intuition for us, would be, in fact, only the phenomena of themselves: We might very well say what they were at the instant of appearance, but we could not question what they might be

every where and always, nor above all could we declare what they could, or might not be. But if the conditions of the existence of the phenomena are the conditions of the possibility of thought, we come easily out of this embarrassing alternative: because on one side, we can determine these conditions absolutely *a priori* since they result from the nature of our mind itself; and we can not doubt on the other hand, that they apply to the objects of experience, since, outside of these conditions, there is for us neither experience nor objects.

Now, how does this hypothesis, if we must call it so, permit us to render account in particular, of the principle of induction? We believe that we should resolve this principle into two distinct laws: one, according to which all phenomena is contained in a series, where the existence of each term determines that which follows it; the other according to which all phenomena is comprised in a system, where the idea of the whole, determines the existence of the parts. These are the two laws which it is needful to establish by showing that if they do not exist, human thought would be impossible: We shall begin with the first of these.

The first condition of the possibility of thought is evidently the existence of a subject which distinguishes itself from each of our sensations: For if these sensations existed alone, they would entirely confound themselves with the phenomena, so that there would remain nothing that we might be able to call ourselves or our thought. The second is the unity of the subject in the diversity of our sensations, as well simultaneous as successive: because a thought which was born and which perished with each phenomenon, would be for us only a phenomenon itself, and we should have need of another subject in order ot gather all these scattered and ephemeral thoughts into the unity of a real thought. Now, how can these two conditions be filled, or how can they represent to us the unity of the subject thinking and the relation it sustains with the diversity of its objects? Shall we say that the subject is a substance, of which the phenomena, or at least the sensations which represent them to us, are the modifications? No, because, after the idea we usually form of substauces they only manifest themselves by their modifications, and cannot, in consequence, be distinguished from them as a subject from an object. Shall we say that we are ourselves in our own eyes, a phenomenon, or rather a durable act, that of

voluntary effort, which opposes itself by its duration, and by its active character to the passive and ephemeral modes of our sensibility? No, because this effort which renews itself at every awakening, or rather at every single instant, and which is probably only a bundle of actions exerted separately by every one of our muscular fibres, does not present the character of absolute unity which appears to us indispensable to the subject of consciousness. Shall we search for the unity of this subject in that of a thought turned in upon itself, which contemplates itself outside of time and of all sensible modification? This hypothesis satisfies better than the preceeding, the two conditions which we laid down above; but it seems to us still further removed from satisfying a third condition, which is nevertheless inseparable from the two others. We have indeed established, that sensations without subject and without connection cannot constitute of themselves any consciousness: but it is evident that consciousness does not any more consist in the solitary action of a subject shut up in itself, and external in some sort to its own sensations. It does not suffice therefore, to explain in a more or less plausible manner, how we are able to have consciousness of our own unity: it is necessary to show at the same time how this unity manifests itself, without dividing itself, in the diversity of our sensations, and thus constitutes a thought which is not only the thought of itself, but still more, that of the Universe. Now this is evidently impossible, if the subject thinking is given to itself by an act independent of all sensation and purely special: because not only could this simple and durable act, have not possibly anything in common with the multiple and successive acts which are related to phenomena, but we have no reason to believe that two functions, so strange one to the other, could be exercised by the same mind. The thought would find itself placed then before its own existence as an insoluble enigma: because it could only exist if our sensations were able to unite themselves in a subject distinct from themselves, and a subject which distinguished itself from them, would seem by that, incapable of uniting them. There is however, a means of escaping from this difficulty, and there is only this means: It is to admit that the unity which constitutes us, in our own eyes, is not that of an act but that of a form, and, instead of establishing amongst our sensations an external and factitious connection, to say that it results from a sort of affinity

and of cohesion natural to these sensations themselves. Now the relations natural to our sensations among themselves can be only those of the phenomena to which they correspond: The question then of knowing how all our sensations unite themselves in a single mind, is precisely the same as that of knowing how all the phenomena compose a single Universe. It is true that this latter unity is easier to admit than to comprehend: How, indeed, can several things, of which one is not the other, and which succeed each the other, form *one* thing? Why an infinite number of phenomena, of which each occupies a distinct place in time and space, should be in our eyes elements of a single world, and not of as many distinct worlds as they are different from each other is difficult to explain. Is it because these places, however different or distinct they may be between themselves, belong all to one single time and one single space? But what prevents our saying that space ends and begins with each of these bodies or rather atoms which occupy it, and that time dies and lives again at each vicissitude of the movements it measures? Space and time, in spite of the perfect similarity of their parts, are not in themselves one unity but on the contrary, an absolute diversity: and the unity which we attribute to them—far from serving for a basis for that of the Universe, can only repose itself upon the internal links of the phenomena which fill them. The question reduces itself then to the discovery of what makes this relation: and we are only able it seems, to represent to ourselves under this title an order of succession and of concomitance, in virtue of which the place of each phenomenon in time and in space may be assigned by relation to all the others. But always unity which results from such an order is still only a unity of fact, of which nothing guarantees to us the continuance: and we cannot even say that simple relations of time and place establish between phenomena, a veritable unity, in as much as these relations may vary at every instant, and that the existence of each phenomenon rests not only distinct, but still independent from that of others. It is not then in a contingent relation, but in a necessary connection, that we might be able to find at last the unity we look for: because, if the existence of a phenomenon is not only the constant sign, but still more, the determining reason of the other, these two existences are only then, two distinct moments of one existence, which continues itself by transforming the first phe-

nomenon into the second. It is because all these simultaneous phenomena are, as Kant has said, in a reciprocal action, universal, that they constitute one single state of things, and that they are the object of a single thought upon our part; and it is because each one of these states is only, in some sort, but one new form of the preceding, that we are able to consider them as the successive epochs of a single history, which is at once that of thought and that of the Universe. All phenomena then, are submitted to the law of efficient causes, because that law is the only basis that we can assign to the unity of the Universe, and that this unity in its turn, is the supreme condition of the possibility of thought. But the law of efficient causes not only renders possible our knowledge of phenomena; It is also the only explanation which we can give of their objective existence, and that existence furnishes a new demonstration consequently of it.

We can not seriously doubt that sensible things exist in themselves, and continue to exist after we have ceased to feel them; and, on another side, we cannot understand that there can be a color without an eye to see it, a sound without an ear to hear it, and, in general a sensible phenomenon outside of any modification of our sensibility. It has been believed that the existence of the world might be assured by concentrating it, in some way, entire, within the phenomenon of resistance: but this phenomenon is as relative to what is called justly, the sense of effort, as the other qualities sensible to our other senses; and, if it has the privilege of making us know the distinction of our body from other strange bodies, it certainly has not that of surviving itself or of guaranteeing to us, that these bodies and ours will continue to exist, when we cease to have consciousness of their contact. We may say, at the risk of not comprehending it ourselves, that existence does not belong precisely to phenomena, but to the substances in which they reside. But, whether we grant to skeptics that phenomena vanish with our sensations, and, in that case, it is useless for us to preserve pretended entities, which are for us, as if they were not; or whether we hold with the vulgar, that the visible sun loses nothing of its brilliancy in quitting our horizon, it is then equally indifferent whether its disc subsists in itself, or reposes upon an entity inaccessible to our gaze. Perhaps by the substance of the sun, one means not, an entity distinct from the visible sun, but the enduring existence which we attribute to the sun itself, and which

one wishes to distinguish from the passing impression which he produces upon our senses: but we find ourselves then in presence of the difficulty itself, which it is attempted to solve, and which consists in comprehending how a pure phenomenon can exist in itself and independent of all sensation. For the rest, we shall find looking closer at it, that such an existence is not seriously admitted by any one: because, when we speak of a phenomenon which produces itself in the absence of all sensible existence either we deprive it of the form under which it offers itself ordinarily to our perception or we become ourselves, in despite of our own supposition, the imaginary spectators. We might be able, then, it seems, to limit ourselves, to the recognition that phenomena, or, what is the same for us, our own sensations possess, beyond their actual existence, a sort of virtual existence, that is to say, that, even when we do not experience them, we might experience them, if we were placed in convenient conditions of time and place. One might be able even to suppose, with Leibnitz, that no phenomenon is absolutely excluded from our consciousness, and that not only the smallest parts, or the most distant parts, of the Universe are represented in us by some insensible perceptions, but that the past and the future are in some sort present to us, whether it be by the traces of past perceptions which mingle with our actual perceptions, or whether it be by the germ of future perceptions which an eye more piercing than ours might be able to discover in these very perceptions. We should make then, out of our own thought, according to an expression dear to Leibnitz, a Universe in abridgment; and we should be equally removed from the vulgar prejudice which places sensible things outside of all sensibility, and from the sceptical paradox which admits nothing beyond the grossest and most pronounced sensations, always, however, if we should succeed in procuring thus a sensible sort of existence for the world, we must acknowledge that this existence is still altogether subjective and relative to our individual sensibility: because we can not deny that common sense compels us, to distinguish sensible things not only from our actual sensations, but to detach them entirely from ourselves and to assure to them an existence absolute and independent from our own. Shall we say, with Leibnitz, that there exists an infinity of minds, each one of whom represents the same world to himself but under a differing point of view? But minds which represent bodies, are not bodies; and otherwise,

since we have any business only with our own representations, how shall we be able, not only to establish, but even to suspect, that there exist other minds outside of our own? For the rest, whatever the system may be, that is adopted we can never go outside of ourselves; we must then either shut ourselves up in a subjective idealism, very nearly related to scepticism at its best, or find in ourselves a basis capable of supporting at one time, the existence of the sensible world, and that of other minds. Now what can there be in us, which does not depend upon us, and which represents or rather which constitutes, an existence distinct from our own? This cannot be the phenomena themselves, which are only, at least for us, our own sensations. It is not their juxtaposition in space and their succession in time, since time and space seem to be only the forms of our own sensibility, and that it is impossible to assure ourselves that they may be anything else: but, if the place of each phenomenon in space and in time appears to us so determined by those which precede or which accompany it, that it is impossible for us to remove the thought of them, this necessary determination is doubtless something distinct from ourselves, since it imposes itself upon us, and it resists all the caprices of our imagination. Will it be said, that this necessity resides itself in us, and that it is not less relative to our understanding than the phenomena themselves to our sensibility? Let there be shown to us then an existence, or in general, a truth pure from all relation to our thought: but let us be permitted to say, in the meantime, that we are, in so much as we are individual, only the whole of our sensations and that a necessity of which our sensations, as such, cannot render any account, constitutes by that itself, an existence as distinct from our own as one could reasonably demand. It is not because we feel certain phenomena, one after the other, that they necessarily link themselves in a chain, but, on the contrary, it is because they should develop themselves in a necessary order under the point of view which is special and particular to them: and, as soon as we recognize that the series of our sensations is only a particular expression of universal necessity we conceive at the least, the possibility of an infinity of analogous expressions, corresponding to as many points of view possible upon the Universe. The necessary determination of all phenomena is then at once for us the existence even of the material world and the only foundation that we can assign for that of other minds; and if

one should prefer, in spite of all, to admit without proof existences absolutely external to our own, it is easy to show that one has more to lose than to gain by the change. The supposition of such existences has in truth, nothing impossible in itself: but if it is demanded what they are for us, it will be found that since they are situated outside of us, they can be given to us only by some impression they exert upon our intelligence: they will then only appear as a modification of ourselves, and will become absolutely subjective precisely because it is wished that they should be absolutely objective. An existence is only objective for us when it is given to us in itself, and it cannot be given to us in itself except it leaps in some sort out of the bosom of our own existence: between the subjective idealism of Hume and the objective idealism of Kant, it is for common sense to choose.

As to the rest, if the law of efficient Causes explains at once our own knowledge of phenomena and the existence which we attribute to them, these two things are strictly united, and can only form in reality one thing. The property of thought is in reality, to conceive and to affirm the existence of objects: and it is evident that a thing can exist for us, at least, only when it is of the number of objects of thought. But thought is nothing in its own eyes outside of the necessity which constitutes the existence of phenomena. How otherwise would it have consciousness of them, if it is substantially distinct from them, and how will it represent this necessity itself, if not as a sort of blind thought pervading the things? We do not know either what may be the existence of a thing-in-itself nor what consciousness we may be able to have of ourselves in another life: but in this world of phenomena of which we occupy the centre, thought and existence are only two names of the universal and eternal necessity.

V.

Not only does the law of efficient Causes result *a priori* from the relation of thought with phenomena, but this law permits us to determine in turn, by a new deduction the nature of phenomena themselves.

It is evidently necessary that the laws should be applied to phenomena, since otherwise they would have no signification; and this application could take place only by a simple act of thought, which conceives each law in perceiving the phenomena

it governs. But, for this act to be truly simple, it is necessary that it should consist in seizing under two different forms, one only and the same thing, it is needful that the law should be only the abstract expression of the phenomena and that the phenomena should be only in their turn, the concrete expression of the law. Now this correspondence between phenomena and laws may be established in two ways: either, the conception of laws is determined by the perception of phenomena, or it must be on the reverse, the peception of phenomena which governs the conception of laws. We proceed in the first manner when we say, for instance that heat expands bodies; For we then only announce under a general form, what our senses have already represented to us in one or several particular cases. But it is not the same when it concerns the universal connection of causes and effects: We conceive here the law before having perceived the phenomena, and it is the secondaries who are in some sort made to furnish us with the sensible representation of the first. It is necessary then that we perceive even in the diversity of phenomena, a unity which links them together: and, since the phenomena are a diversity in time and in space, it is necessary that this unity should be that of a diversity in time and in space. Now a diversity in time is a diversity of states: and the only unity which can conciliate itself with this diversity is the continuity of a change, of which each phase differs only from the preceding by the place which it occupies in time. But a diversity in time and in space is a diversity of states and of positions altogether; and the unity of this double diversity can be only a continuous and uniform change of position, or in a word a continuous and uniform movement. All phenomena then are movements, or rather one movement which follows the same direction and with the same rapidity as far as possible, whatever may be the laws according to which it may transform itself, and whatever may have been upon this point the errors of the Cartesian mechanism. But what Leibnitz has never contested with Descartes, and what seems to us above all contest is, that all, in nature, ought to be explained mechanically. For the mechanism of nature is, in a world subject at once to the form of time and space, the only expression possible of the determination of thought.

Doubtless, we do not perceive movements only, but also col-

ors, sounds, and all which it is agreed to term the secondary qualities of matter: but we must not confound simple appearances which exist only in our sensibility, with veritable phenomena, which can alone pretend to a subjective existence. The phenomena in truth, should offer to us, in their diversity even, a sort of realization of the unity of thought: and this unity can not realize itself except in a homogeneous diversity, which may be, so to speak one in power, as that of time and space. Secondary qualities on the contrary are of a heterogeneous diversity, which has by itself or in itself nothing in common with that of time and space: because color is only extended through accident, and we cannot say that it augments or diminishes, when the surface it covers becomes larger or smaller. We can not admit either that these qualities have duration in themselves: because we cannot measure directly, either the time during which each one of them affects our sensibility, nor that which passes in the passage of a sensation to another sensation entirely different. But if they do not appear to us under the form of space and time, they are nevertheless given to us in space and time: and it would be impossible to render an account of the place they occupy in them, if no link attached them to a phenomenon which, alone, fills by itself both the one and the other. The perception of these qualities is then only, as Leibnitz believed, the confused perception of certain movements; and if they cannot give place for a direct and express knowledge, nothing prevents us from seeing in them, the object of an indirect and in some degree a virtual knowledge. If they are not phenomena, they are at least well founded appearances, and not vain dreams; They exist, not in themselves, but in movement, upon which they rest, and which they follow faithfully in all its vicissitudes: they are in us by themselves and outside of us by what they express. The movement is the only veritable phenomenon, because it is the only intelligible phenomenon; and Descartes was right in saying that every clear idea, was a true idea, because the intelligibility of phenomena is precisely the same thing as their objective existence. But there ought to be something true, even in the most obscure modes of our sensibility: because there is no place in our thought for an absolute illusion, and nothing of that which is given to us, can be absolutely excluded from the sphere of thought and from that of existence. The secondary qualities are in some sort, the matter set at a distance, (matière eloignèe) of

existence and of thought: between the absolute diversity of this matter and the absolute unity of its form there must be an intermediate, and we find this intermediate, in the continuity of force.

If all, in nature, should be explained mechanically what becomes of spontaneity of life and the liberty of human actions? Must we subtract from the law of mechanism a considerable part of phenomena, or hold with Descartes, that beasts have no souls, and with Leibnitz, that our own movements are executed no otherwise than those of the magnetic needle? This is the double question which remains for us to examine now.

We cannot misunderstand the harmony which sustains the life whether it be of plants or of animals; It is required now to know whether this harmony is a simple result of general laws of motion, or if it is the work of a special agent, distinct from each organism and subject to laws exclusively teleological. Now this latter hypothesis seems to us, independently of all *a priori* consideration absolutely inadmissible. We can at first raise some difficulties upon the number or the division possible of these agents in plants, and in those of animals, who multiply themselves by a sort of budding out. We can demand in general, whence they come, whether they are created *ex nihilo* at the moment of each generation, and how they perish in spite of their simplicity, when the body which they animate comes to be dissolved. We can still further recall the provisional character of the explanation of vitality, and the ground upon which they have yielded, and upon which they continue to yield every day to mechanical explanations; but we will content ourselves with demanding from the partisans of this hypothesis how they prove what they advance, and by what sign they are able to recognize, in the formation and play of an organ, the intervention of an immaterial agent. Whatever opinion one may adopt upon the cause of vital phenomena, one cannot deny that these phenomena may be in themselves movements: The question is reduced to knowing whether all these movements are connected in virtue of laws of mechanism, or whether some begin and stop, changing in swiftness and direction, without being determined in these by other movements. Now how shall we penetrate profoundly enough into the structure of living beings, to assure ourselves that a suitable movement, which produces itself suddenly in a portion of their body, is not the consequence of impercepti-

ble movements which execute themselves first in the parts of this part? How shall we ever undertake such a research if we think that the division of these parts may go, and without doubt does go, as Leibnitz believed, into the infinite? More, it is impossible to accord to a spiritual agent the least influence upon vital movements without investing it, in regard to these movements, with a true creative power; for not only he could not suspend them without annihilating them, or without impressing upon the same parts, an unequal and inverse movement, which as Descartes has said, is the direction of the motion and is inseparable from the motion itself; this agent then could not change the direction of an organic motion without replacing it by another, or at least without producing a movement in a different sense, which would combine itself with the first. Now a creative power is, in its nature itself, absolutely illimitable. Behold therefore in the Universe as many sources of motion as there are living beings, and sources of which each can produce an infinite quantity. From whence comes it then that the quantity of motion, in consulting experience only, does not vary in the Universe? From whence comes it that our forces are so limited, and what hinders us, as Leibnitz asked, from leaping beyond the moon? From whence comes it, that they are so soon exhausted, and that they have need of being incessantly repaired by slumber and food? From whence comes it that each soul is so slow in constructing the body it inhabits and so prompt to let it perish?

The hypothesis of a spiritual agent, exclusively determined by final causes, seems above all, difficult to conciliate with the anomalies and the disorders which the organs and functions of living beings, often present. It is indeed impossible to hold seriously that this agent does its best to maintain harmony in the organism, but that all its good will is shipwrecked, as it were, against the blind power of matter: because there is no agreement nor possible conflict between material molecules which can only preserve or transmit a finite quantity of motion, and a spirit capable of creating at every instant an infinite quantity. We must then place within this spirit himself, the cause which limits or alters the action which he should exercise upon the organism. It would have to be said that there are ignorant souls, who confound the traits of the type they are charged to realize, and feeble or perverse souls who after having achieved their work, neglect to preserve it, or even take pleasure in hast-

ening its ruin. Now it is difficult to conceive how a simple being, who tends naturally to produce a certain effect, can encounter in itself an opposed tendency, or at least an insurmountable obstacle: and it must be conceded that things pass then in the soul, no otherwise than they would pass in the body, if the greater part of the organic movements tended in themselves, to accomplish themselves in the most convenient order, although this concert was destroyed in part by some irregular movements. But if the simplicity of this hypothetical being, seems compromised by aberrations and failures, that we are forced often to attribute to him, is it easier to conceive, even when we regard its action in the most wise, and sustained manner? It is necessary in truth, that it should represent itself under some form, and the system of organs that it constructs and the sequence of movements that it impresses upon them: it is necessary then that it should include in its pretended simplicity a precise diversity equal to that of the organism, and also a consciousness more or less obscure of this diversity: therefore what does it serve, and why, if we must admit such a consciousness should we not place it in the organism itself? In short, how is the plan after which it works, formed in the intelligence of this being? This plan, cannot be the work, either of his will, or even of the will of a stranger: because this will must have been directed by an anterior plan, which would suppose in its turn another will, and so on to infinity. It must be therefore that the plan of each organism should be formed in itself, before all reflection and all knowledge: it must be that the materials of this ideal organism, at first scattered and without form, should be assembled and polished in virtue of laws which are apparently inherent in them: but what prevents us then from saying as much of the real organism, and what is there absurd in explaining the formation of the body by a mechanism which ends by compelling us to transfer it to the soul? That this mechanism may be, in some sort, penetrated with final causes, is what we do not dispute, and is indeed what we reserve to ourselves to demonstrate later. We wish only to establish that nothing authorizes us to realize this purpose or design in a special agent subtracted from the general laws of matter and of motion. There remain only then, the actions of man which seem to derogate from universal mechanism; and it is needful for us to take our part of this derogation, if there is no other way to save freedom in the sense in

which it is bound to the fulfillment of the moral law; because we are bound by this law itself, to believe that we possess all that is requisite to fulfill it. But perhaps it is not necessary in order that we should answer for our actions, that there should be in the time preceding them, any reason which determined them; and it seems not less conformed to common sense, to explain in some sort historically, an action which may be guilty, than to condemn it in the name of conscience. All know how Kant essayed to put reason in accord with itself on this point, by placing moral liberty in a sphere superior to that of time and phenomena; and inasmuch as the falsity of this hypothesis has not been demonstrated, it will be permitted to us to examine whether our actions, considered as simple events, and an abstraction being made of their moral character, obey or not the general laws of nature.

Now if we refuse to vital spontaneity the power of modifying the movements which are executed of themselves in our organism, it is clear that the same reasons ought to prevent our granting this to our will; and the external mechanism of our actions would not be the object of a single doubt, if internal experience did not pronounce, according to some philosophers, in favor of a liberty of indifference absolutely irreconcilable with this mechanism. The question reduces itself then to knowing whether we will without motive, or what amounts to the same thing, without taking account of the motives which solicit our will; and it is easy to show that upon this point the pretended decision of internal experience is contrary, not only to the supreme law of all experience, but still more to the facts acquired by an attentive observation. No one believes, in fact, or dares to pretend that a wise man, on an important occasion, will take indifferently the part he judges to be the better, or that which seems to him the worse; and it would be a waste of our time to weigh, in such a case, whether the for and against (pro and con) of our deliberation was an affair of pure curiosity, and that it ought not to exert any influence upon our conduct. We are reduced then to cite the example of those who act from caprice, as if their vanity and their idleness were not for them the most powerful of interests; insignificant actions are assigned to us, which we accomplish almost mechanically, and it is asserted that we are determined in these without reason, because we do not observe the reasons which do determine us. It is certain that a man who has

need of a guinea, and whose purse is filled only with pieces of this nature, will take at hazard the first one his fingers may encounter; but place only two guineas upon a table, and try to select one of them without motive; or lift up your hand, as Bossuet proposes, and see whether, in virtue of your free will, you can incline it to the left or to the right. Will it be to the right? No, because that movement will probably appear to you the most natural. It will then be to the left? No, because you have now a motive in avoiding the right. It will tend then to return to the right, but it is clear you have not advanced in this; and the question might remain lingering and hanging, if fatigue did not cut it suddenly short during a moment of distraction, in favor of the most comfortable movement.

It is sometimes said that if free will did not exist, all human life would be upset; but it seems that a liberty of absolute indifference, which would leave us without any hold upon the will of our kind, and would make of their future conduct an enigma to which they would not themselves have any key, would be more likely to produce the effect spoken of. It would not suffice to recognize that men ordinarily decide after certain motives, if we have no reason to think that these motives will decide them still upon given occasions; and it would be impossible to form the least conjecture upon this point, if their decision was not subjected to laws absolutely certain in themselves, however uncertain may be the knowledge we have of them. We are doubtless very far from being able to calculate the conduct of a man with the same precision as the path of a star; but there is also no proportion in the difficulty of these two problems, since this conduct is determined not only by inclinations whose relative strength varies from one instant to another, but yet more by the reflections which contribute to put them in play, and whose circle may extend to the infinite. It is none the less true that a mediocre knowledge of the character of a man and of the circumstances in which he is placed will suffice ordinarily for us to judge without great danger of error, of the part he will take; and the influence which men exercise over each other, whether in private or public life, depends in great measure upon the sagacity which they may exhibit in this way, and which for some men seems almost to be a sort of infallibility. But there is still another case in which it is given to us to understand almost certainly of the will of our kind; it is where we operate, not upon

individuals but upon masses, and where we endeavor only to determine a certain number of actions of a certain nature, whatever may be otherwise in particular those who are to accomplish them. It is thus that a skillful merchant is able to assure to himself a constant number of buyers, of which each one is personally unknown to him, and when he sells his business to another, he values in money not only the merchandise that is in his store, but still more the *good will* presumed, of these unknown persons who come to seek his merchandise. These calculations, in which human will is treated almost like a physical agent, have doubtless something in them humiliating to our nature; and nevertheless they are not only indispensable in our private transactions, but they have become, above all in our day, under the name of statistics, one of the principal elements of the science of government. There is a statistic of production and exchange, according to which political economy seeks the means proper to increase the wealth of nations; there is even a statistic of crime, upon which penal legislation ought to be regulated, in order to establish a sort of balance at each epoch, between the violence of passions which menace public security, and the degree of fear necessary to restrain them. What is there then surprising in that our actions obey externally a physical mechanism, since human society is founded upon a moral mechanism, which each one of us, in his sphere, finds it necessary perpetually to know and to manage the secret springs of?

A whole of movements, of which no external cause comes to modify the direction and swiftness, whether it be of living bodies, whether it be even of those in which intelligence is joined to life, such is then the sole conception of nature which results from what we know, so far, of the essence of thought. This conception, if it should be exclusive, would be a sort of idealistic materialism; but we should not forget that it responds only to one-half of the principle upon which reposes our knowledge *a priori* of nature, and we must go now to seek its completion in passing from the consideration of efficient causes to that of final causes.

(To be Concluded).